

REMARKS

The Office Action mailed September 18, 2002, and the prior art cited and relied upon therein have been carefully reviewed. The claims in the application are now new claims 9-12 only, and these claims are submitted to define novel and unobvious subject matter under §§102 and 103. Applicant accordingly respectfully requests favorable reconsideration and allowance.

Acknowledgement by the PTO of the receipt of applicant's papers filed under Section 119 is noted.

The PTO indicates that the present application was filed without an Abstract of the Disclosure. As the present application is the U.S. national phase of PCT/JP00/04223, and as the international publication of such publication contains an Abstract, applicant believes that the Abstract of the PCT publication could serve as the Abstract of the present U.S. national phase application.

Moreover, according to the records of undersigned, the present application was filed with an Abstract which appears on page 29 of the English language text filed in the PTO upon entry into the U.S. national phase. As such page 29 may have been lost within the PTO, a duplicate copy is

attached hereto, which applicant requests be entered as the Abstract for the present application.

Claims 1 and 4-8 have been rejected under the first paragraph of §112. The rejection is respectfully traversed.

Applicant's original claims have been deleted, although new claims 9-12 fall within the subject matter rejected under the first paragraph of §112. The invention as recited in new claim 9 is characterized in that it comprises protease of 0.1 to 5% by weight which is extracted from fruit bodies of or mycelia of basidiomycete such as *Agaricus blazei* Murill or *Phellinus linteus*, and culture supernatant of lactic acid bacteria of 1 to 50% by weight, which is mixed with said protease.

Those skilled in the present art are highly skilled individuals. They certainly are capable of producing proteases, even without applicant's specification as guidance. The present invention does not relate to proteases *per se* which are already known. As the Supreme Court of the United States stated in *Loom Co. v. Higgins*, 105 US 580, 586, the inventor

may begin at the point where his invention begins, and describe what he has made that is new, and what it replaces of the old. That which is common and well known is as if it were written out in the patent....

To have it any other way would make all patent specifications unduly prolix.

Applicant's invention involves a new use of proteases as called for in applicant's cosmetic claims, i.e. a new cosmetic incorporating a protease and a supernatant of lactic acid bacteria.

Moreover, the rejection is factually incorrect in implying that the subject matter of original claim 4, now carried over into the new claims, is not supported by any specific working example. In this regard, attention is respectfully invited to reference example 2 commencing at page 24, line 16, which specifically shows production of protease from the fruit body of *Agaricus blazei* Murill.

Applicant requests withdrawal of the rejection.

Claims 1 and 4-8 have been rejected under the second paragraph of §112. This rejection is respectfully traversed.

Applicant submits that the criticized language, considered in light of applicant's specification (fully consistent with the law), would not be confusing to those skilled in the art, and therefore the claims in their previous and present form are fully in accordance with §112.

As noted above, proteases are known. There is no confusion and there is no indefiniteness.

The rejection incorrectly states that the specification does not define what these proteases are. This is simply incorrect! Applicant again notes reference example 2 at pages 24 and 25. The same is true with regard to the recitation of the culture supernatant of lactic acid bacteria which is described in detail in reference example 1 commencing at the bottom of page 15 and in the first paragraph on page 16 of applicant's specification¹. Again, those skilled in the art know what these materials are, even without the guidance of applicant's specification, because materials which are used in accordance with the present invention are *per se* known.

Applicant respectfully requests withdrawal of the rejection.

Claims 1 and 8 have been rejected under §102 as anticipated by Lee et al USP 4,524,136 (Lee). This rejection is respectfully traversed, and in any event is not applicable in view of applicant's deletion of claims 1 and 8 and the presentation of new claim 9-12.

Claims 1-3 and 8 have been rejected as obvious under §103 from Minoru et al JP '363 (Minoru) in view of Reiko JP '531 (Reiko), further in view of Bloching et al USP 4,142,999

¹ Applicant wishes to be clear on the record that reference examples 1 and 2 are only examples respectively of a lactic acid bacteria culture supernatant and a protease for use in accordance with the present invention. These examples are not intended to be limitative.

(Bloching). This rejection is respectfully traversed, and in any event is believed to be no longer applicable in view of the amendments presented above. Applicants remarks concerning the non-obviousness of the present invention appear below.

Claims 1, 7 and 8 have been rejected as obvious under §103 from Minoru in view of Reiko and further in view of Masayuki JP '734 (Masayuki). This rejection also is respectfully traversed, but in any event is believed to be no longer applicable in view of the amendments presented above. Again, applicants commentary concerning the non-obviousness of the present invention appear below.

Claims 1, 2, 4-6 and 8 have been rejected as obvious under §103 from Minoru in view of Reiko and further in view of any one of JP '429, JP '579 or Minosasa et al JP '216 (Minosasa). This rejection is respectfully traversed.

As noted above, the present invention as called for new claims 9-12 focuses on protease from fruit bodies or mycelia of basidiomycete such as *Agaricus blazei* Murill or *Phellinus linteus*, which protease has a high enzyme activity and has been discovered, in accordance with the present invention, to provide an improved function for removing blotches from the skin by degrading protein combining with melamine pigment. It should be noted in the present invention

that the protease does not degrade the melamine pigment itself, but acts to assist the natural cycle of the skin on the cells in a periphery of the blotch to show an advantageous effect, simply by applying only a small amount of the claimed cosmetic on a diseased part.

On the other hand, because the culture supernatant includes an ingredient for stabilizing living cells with adjustment of cytolysis action the cells by the protease, it is possible to regenerate effectively the skin after the blotch is removed and to carry out a function for moisturizing the skin.

In this way, since it is possible to remove efficiently the blotch without damaging the skin and to contribute to the regeneration of skin, the value of the cosmetic of the present invention is very high. This evidences non-obviousness, no one ever before having achieved this advantageous result.

On the contrary, the cited references do not disclose at all or even remotely suggest the fact of removing the blotch combining with the melamine by use of a protease extracted from a basidiomycete, and the stabilization of skin cells after the blotch is removed, by use of the culture supernatant of lactic acid bacteria.

Consequently, it is applicant's position that the present invention is patentable over the cited references under the provisions of 35 USC 103.

More specifically, Lee teaches a processing step of forming a cosmetic having moisturizing effect in which formation of lactic acid and hydrolysis of casein is carried out simultaneously in skim milk by lactic acid bacteria and a protease. However, Lee does not disclose the protease extracted from the fruit bodies or mycelia of basidiomycete, and the culture supernatant of lactic acid bacteria, as in the present invention.

Reiko discloses a cosmetic including papain and citric acid, Bloching discloses papain and bromelain, and Minoru discloses a cosmetic using ingredient of the cellular walls of lactic acid bacteria or bacteria as an effective ingredient. However, these cited references as with Lee do not disclose or teach a protease extracted from the fruit bodies or mycelia of basidiomycete, together with the culture supernatant of lactic acid bacteria, which are the features of the present invention. Accordingly, if the papain disclosed in Reiko or Bloching is combined with the lactic acid bacteria disclosed in Minoru, the same cosmetic as the present invention cannot be obtained. As a result, the cosmetic according to the present invention would not have been obvious

to those skilled in the art, even if the proposed combination were obvious.

Masayuki also discloses only a cosmetic including a fermentation liquid which is cultured using yeast separated from kefir. If the fermentation liquid in Masayuki is substituted for the lactic acid bacteria in Minoru and the fermentation liquid is combined with the papain in Reiko, the same cosmetic as the present invention cannot be obtained. Accordingly, the cosmetic according to the present invention would not have been obvious to one having ordinary skill in the art, even if the proposed combination were obvious.

JP 11199429 discloses an agent for external use on skin in which a substance extracted from *Agaricus blazei* mycelia is incorporated. JP-6080579 discloses a substance for anti-oxidation using a fermentation material of soy bean, and Minosasa discloses a cosmetic in which an extracted substance of *Grifola frondosa* is incorporated therewithin. However, if the lactic acid bacteria in Minoru or the papain in Reiko is combined with the aforementioned substances, the same cosmetic as the present invention cannot be obtained. Accordingly, the cosmetic according to the present invention is not obvious to one having ordinary skill in the art, even if the combination were obvious.

As regards applicant's present claims, JP '429 appears to be the closest prior art as it is the only applied prior art which mentions an extract of a basidiomycete, in particular *Agaricus blazei* mycelia. But even if the proposed combination were obvious, not accepted by applicant, the present invention still defines non-obvious subject matter due to the unexpected improvement achieved. In this regard, attention is invited to example 15 and table 14 on page 25 of applicant's specification (the code for the tables appears on page 20). The results of table 14 may be compared, for example, with results using proteases of other sources, e.g. compare with tables 7-12. Unexpectedly improved results are achieved according to the present invention.

The Office Action itself recognizes the unobviousness of the present invention. Thus, in the first full paragraph on page 3 of the Office Action, the following appears:

The number of known proteases is immeasurable, and each day new ones are discovered. Thus, in order to determine which proteases, out of all the known proteases, work in the instant invention, a great deal of time and experimentation would be required. ... As disclosed by Lee et al. (4,524,136), one of skill in the art would know that papain and bromelain and a few other proteases, can be used in cosmetic compositions, but would not know what properties made some proteases useful in cosmetic compositions and others not useful. furthermore, while a great number of

proteases are physically known, their chemically properties are not necessarily known. Hence, it would be impossible for the skilled artisan in the cosmetic art to be apprised of every protease that works in the instant invention.

The PTO seems to take the position that much of what applicant originally claimed would have been unobvious, **even with** applicant's specification as guidance. It is certainly true that the person of ordinary skill in the art, without applicant's specification as guidance, would not have been able to come up with applicant's invention, i.e. the prior art by itself does not enable the person of ordinary skill in the art to reach applicant's invention.

The combination of the protease extracted from the fruit bodies or mycelia of basidiomycete, and the culture supernatant of lactic acid bacteria, is not suggested in the cited references, and would not have been obvious.

As described above, according to the present invention it is possible to remove effectively blotches from the skin without damaging the skin and to contribute to the regeneration of the skin and therefore the value of the present invention is very high. The present invention constitutes an important advance in the art.

To the extent that the proposed combination of references applied against claim 4 might be deemed to apply to

new claims 9-12, applicant respectfully requests withdrawal of such rejection.

The prior art documents made of record and not relied upon have been noted, along with the implication that such documents are deemed by the PTO to be insufficiently pertinent to warrant their application against any of applicant's claims.

Favorable reconsideration and allowance are earnestly solicited.

Respectfully submitted,

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